

To: Tom Hagler/R9/USEPA/US@EPA;Bruce Herbold/R9/USEPA/US@EPA[]; ruce Herbold/R9/USEPA/US@EPA[]
From: "Obegi, Doug"
Sent: Thur 4/28/2011 3:33:46 PM
Subject: FW: Kimmerer 2011
[Kimmerer2011_DeltaSmeltEntrainment.pdf](#)

FYI – in case you haven’t seen it yet.

From: Obegi, Doug
Sent: Thursday, April 21, 2011 4:53 PM
To: 'Mike Chotkowski'; Dan Castleberry (dan_castleberry@fws.gov); Scott Cantrell; Carl Wilcox; 'Jennifer_Norris@fws.gov'
Subject: Kimmerer 2011

Hey folks,

If you haven’t already, I’d strongly encourage you to take a look at Wim Kimmerer’s new paper on delta smelt entrainment that was published in San Francisco Estuary and Watershed Science journal as a companion to BJ Miller’s paper. In particular, I was struck by this paragraph near the end of Wim’s paper:

“The results (Figure 3) show that the losses were not generally detectable in the regression until Pmax reached about 60% to 80%. The levels of loss reported by Kimmerer (2008) were obscured by interannual variability in nearly all simulations, and maximum losses less than 20% were undetectable. Yet a Pmax of 20% (mean annual loss of ~10%) results in a 10-fold reduction in population size by the end of the 26-year simulation (Figure 3). Repeating the above simulation 10,000 times with Pmax = 20%, the upper 95% and 90% confidence limits of the regression slope excluded zero (i.e., was statistically detectable) in 5% and 9% of the cases, respectively. Thus, a loss to export pumping on the order reported by Kimmerer (2008) can be simultaneously nearly undetectable in regression analysis, and devastating to the population. This also illustrates how inappropriate statistical significance is in deciding whether an effect is biologically relevant (Stephens and others 2007).”

I also read the paper as suggesting that density dependence is not biologically likely at these abundance levels, and that Wim continues to believe that export losses are substantial in some years. But it was the difficulty of observing population level effects in regression analyses that really struck me.

This paper seems extremely relevant to and timely for the effects analysis in BDCP and related efforts.

Best,

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